

## ABSTRACT

A method for transmitting control data on a downlink and/or uplink channel in a base station and/or mobile station in a mobile communication system. In one embodiment, the base station determines whether there is downlink channel data to transmit to a mobile station. If there is no data to be transmitted over the downlink channel for a predetermined time period, the base station drives a random gating position selector to determine a random gating slot position, gates on the control data at the determined slot position, and gates off the control data at other slot positions. The random position selector determines the gating slot position by calculating a value  $x$  by multiplying a system frame number (SFN) of a received signal by a specific integer; selecting  $n$  bits starting from a position which is at an  $x$ -chip distance from the start point of a scrambling code, which has a period equal to one frame, before a plurality of gating durations used in generating a downlink signal; and determining a gating slot position of a corresponding gating slot group by performing a modulo operation on the selected  $n$  bits, where the module operation is by the number of slots in a gating slot group.